

RESPONSE TO COMMENTS
REGARDING THE RESISSUANCE OF THE FOLLOWING NPDES PERMIT
CONCOPHILLIPS EAST BOSTON TERMINAL MA0004006

Introduction:

The U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) solicited public comments from May 24, 2006, through June 22, 2006 on the draft National Pollution Discharge Elimination System (NPDES) permit to be issued to ConocoPhillips East Boston Terminal.

The Draft NPDES Permit is primarily for the discharge of storm water and treated ground water and occasionally water used for the hydrostatic testing of repaired tanks. The facility discharges to Chelsea River.

During the public-notice (comment) period EPA-New England received comments from the Commonwealth of Massachusetts Riverways Program (Riverways). Several of the comments submitted by Riverways were supportive of the approach and provisions of the draft permit. EPA acknowledges these comments and has limited detailed responses to five comments in which Riverways offers suggested changes to permit provisions or seeks clarifications.

In accordance with the provisions of 40 C.F.R. §124.17, this document presents EPA's responses to comments received on the Draft NPDES Permit and any appropriate changes made to the public-noticed draft permit as a result of the comments. The Final Permit is substantially identical to the draft permit that were available for public comment. Although EPA's decision making has benefited from the comments submitted, the information and arguments submitted did not result in any substantial new changes to the permit. EPA did, however, improve certain requirements in the permits as a result of the comments raised. These improvements and changes are further explained in this document and are reflected in the Final Permit.

Summary of Changes Made to the Final Permit

1. The permittee shall provide the City of Boston with a current copy of their Best Management Practices Plan upon written request. (Part I.B.5)
2. The detection limit for cyanide analyses shall be 10 µg/l. (Part I.A.2, footnote 5)
3. For the first 12 months following startup of the groundwater treatment system, the permittee shall sample, analyze and report the untreated groundwater for cyanide. (Part I.A.2, footnote 5)

Comments from Cindy Delpapa, Massachusetts Riverways Program

COMMENT NO. 1

As stated in the Fact Sheet, the effectiveness of an oil and water separator (OWS) is in great part a function of a flow rate at or below the design flow. Given the maximum design flow rate for the ConocoPhillips OWS is 600 gallons per minute (gpm), we would strongly advocate for a flow limitation reflecting this design flow or, preferably, a slightly lower flow to allow a margin of safety.

RESPONSE NO. 1

Paragraph 22a in Part 1, Section A of the draft permit requires written notification and approval should ConocoPhillips propose any changes in treatment or conveyance systems that would have the potential to cause the maximum design flow rate through any component of the storm water or ground water treatment system to be exceeded. EPA is confident that the current storm water conveyance system (with a pump rated to less than 600 gpm, followed by a flow restriction device) provides adequate protection against exceeding the OWS design flow, as demonstrated in the discharge monitoring summary attached to the fact sheet. The requirement to notify and seek approval from EPA and MassDEP if the system is changed, protects that margin of safety.

COMMENT NO. 2

The best management practices plan (BMPP) required of this facility is a key element of this permit and its ability to protect the receiving water. Having the BMPP elements equally enforceable is an important and sound part of the permit. We would like to suggest the BMPP be made available for inspection not exclusively to the EPA and MassDEP but to any interested party upon request.

RESPONSE NO. 2

In response to this comment, EPA will include language in the final permit requiring ConocoPhillips to provide a copy of its BMPP to the City of Boston, upon the submittal of a written request by the City of Boston to ConocoPhillips.

COMMENT NO.3

The draft permit has added a requirement to monitor for cyanide in outfall 2. The single piece of data on cyanide levels associated with this site showed excessive elevated levels of cyanide in extracted groundwater. This finding leads us to question the judiciousness of not imposing a cyanide limitation given the recent finding and the grave toxicity of cyanide. Since the EPA's National Water Quality Criteria for cyanide in salt water has been determined, we would like to see a limitation of 1 µg/l imposed for outfall 2 to be protective of this receiving water which is the recipient of discharges from many bulk petroleum facilities.

RESPONSE NO. 3

In the derivation of effluent limits for discharges from ConocoPhillips, EPA has considered both state and federal water quality criteria for all parameters. When establishing water quality based criteria, EPA is required by 40 C.F.R. § 122.44(d)(1)(ii) to consider the dilution of the effluent in the receiving water, which in this case, is several orders of magnitude. Due to the low flow of the discharges from the groundwater treatment system (typically 5,760 gallons per day) from internal Outfall 002 and the resulting dilution when that flow is combined with storm water (typically 110,000 gallons per day), the discharge from Outfall 001 into Chelsea River will not

likely contain measurable levels of cyanide. Therefore, EPA does not believe that the discharge of treated groundwater from Outfall 001 (via Outfall 002) has a reasonable potential to exceed water quality criteria in the Chelsea River.

In addition to the dilution described above, the inclusion in the permit of a technology-based monitoring requirement for cyanide at internal Outfall 002 provides an opportunity to further ensure that the final effluent is protective of water quality in the Chelsea River. Technology-based effluent limit guidelines for cyanide in contaminated ground water discharges have not been published to date. Concentration-based effluent guidelines that exist for other industries are all greater than 1 mg/l, are pre-treatment standards (i.e. assume further treatment and dilution in a publicly owned treatment works), and are therefore not applicable to this case. However, EPA may develop technology based standards based on well documented data collection from existing treatment systems.

In this case of cyanide contaminated groundwater, there is only one sample that been collected and analyzed for cyanide. The remediation program at the site was initiated due to known releases of petroleum product which would not normally be associated with cyanide contamination. The origins of the cyanide contamination are currently not known. However, to further characterize the nature and treatability of the cyanide, without severely interrupting the ongoing effort to remove petroleum product from underneath the loading dock area at ConocoPhillips (which otherwise may migrate to the Chelsea River), the permit allows the discharge of groundwater that has been treated to remove cyanide. Monthly monitoring of cyanide in effluent from Outfall 002 will provide additional data which can be used to develop technology-base cyanide limits, if necessary, at a later date. To better monitor the viability of the cyanide removal technology, EPA will include a requirement to meet a maximum detection limit for cyanide analysis of 10µg/l in the final permit as well as to measure cyanide in the extracted, untreated groundwater for 12 months following startup of the treatment system.

COMMENT NO. 4

The Fact Sheet Appendix contains information from past monitoring. Included in the list of monitoring results is information about lead. Was monitoring and reporting a requirement in the existing permit? If there were monitoring requirements for this metal why has this proposed permit dropped the requirement? The data indicates a finding of 8.1 µg/l of lead in September of 2005. What is the criteria for lead concentration in salt water? Is there reasonable potential for this discharge to exceed criteria? We strongly advocate for a continuance of lead monitoring given the recent elevated concentration found in the effluent.

RESPONSE NO. 4

The requirement to monitor and report lead concentrations in samples from Outfall 001 has been carried over in subsequent permits since 1990 when two effluent samples indicated elevated lead concentrations.

The Criteria Continuous Concentration (CCC) water quality standard, for dissolved lead in salt water is 8.1 µg/l. The CCC is an estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed to indefinitely without resulting in an unacceptable effect. There is no evidence from the quarterly monitoring that the discharge from Outfall 001 has exceeded this level for an extended period of time. The Criteria Maximum Concentration (CMC), or acute, water quality standard for dissolved lead in salt water is 210 µg/l, well above the maximum concentration measured at Outfall 001.

EPA disagrees with the proposal to continue quarterly monitoring for lead for the following reasons:

- Lead monitoring during the most recent permit cycle indicated only 4 detectable measurements of lead in samples from outfall 001 out of 21 quarterly samples. The average total lead concentration of discharges from Outfall 001 was demonstrated to be less than the water quality criteria even with conservative assumptions about partitioning between dissolved and undissolved lead.
- The facility no longer stores lead containing fuels at their facility making discharges of lead laden storm water highly unlikely.
- The analysis of a contaminated groundwater sample from the loading dock area showed no detectable concentration of lead.
- EPA has not completely removed lead monitoring from the permit since lead analysis (along with analyses for other heavy metals) will continue to be part of the semi-annual whole effluent toxicity LC₅₀ testing (see page 3 of the permit) as described in Attachment A to the permit.

COMMENT NO. 5

Chelsea River is the recipient of numerous effluent discharges from bulk petroleum facilities. The waterway is known to be impaired and not able to meet water quality standards on several fronts. Given the degraded state of the water way and the relatively high number of like dischargers into this small coastal creek, we believe industrial category standard effluent limits, such as TSS and oil and grease limits may not be protective enough to make inroads into the degraded quality of Chelsea River. If possible, we would like to suggest an iterative process where permit limitations are gradually made more stringent until such time as water quality standards are met. Maintaining the status quo has not made gains in water quality and this situation begs for more water quality, rather than technologically achievable, limitations be considered.

RESPONSE NO. 5

EPA shares the goal of improving water quality in the Chelsea River iteratively with each permit renewal. We use the NPDES regulatory tools in setting water quality based effluent limits, technology based effluent limits and/or best management practice (BMP) requirements to move towards that goal. When setting effluent limits, NPDES regulations require that both water quality based and technology based effluent limits be evaluated and that the most stringent effluent limits be used in permits. Water quality based effluent limits are not always the most stringent since the regulations require the dilution capacity of the receiving water be included in the derivation of water quality based effluent limits.

In the case of storm water, the most efficient way to ensure that rain water flowing over and collected by an industrial facility leaves the property with minimal contamination is by implementing management practices that prevent rain water from contacting products stored or used on site that may contain contaminants. For that reason, EPA requires facilities to maintain BMP plans, educate their staff and submit annual certifications that their BMP plans have been updated and are being fully implemented. EPA routinely inspects bulk petroleum storage facilities, such as ConocoPhillips to ensure that this is being done. The BMPs are the first, and most critical, defense mechanisms that protect water quality in storm water. These include maintenance of product transfer and storage equipment, the presence of a roof over the loading

rack, and other spill control and countermeasure procedures. The management of storm water at bulk storage facilities also includes a number of “safety net” BMPs, due to the large quantity of fuel product stored there, to minimize the potential releases to the environment in the case of a leak or spill. At ConocoPhillips these safety nets include visual inspection of storm water collected in containment areas to check for floating product, storage of storm water in holding tanks prior to discharge (providing separation detention time and opportunity for further inspection), and the operation of an oil/water separator. Therefore, the oil/water separator is only one of a series of efforts to prevent discharge of contaminants in storm water.

That said, the BMPs described above, are not the technology standard for process waste water or the remediation of contaminated groundwater. Beginning in 2005, with the reissuance of NPDES permits at seven other petroleum bulk storage facilities on the Chelsea River, EPA has focused considerable effort on ensuring that storm water discharges from such facilities are not combined with non-storm water flows that require additional treatment to remove dissolved contaminants. To that end, EPA has

- required comprehensive characterization of groundwater discharges, pipe infiltration and other dry weather flows from remediation sites;
- prohibited the discharge of untreated contaminated ground water and established internal outfalls for such discharges (such as Outfall 002 at ConocoPhillips);
- prohibited the discharge of tank bottom water from outfalls; and
- prohibited the use of detergents to wash vehicles in storm water collection areas.

These efforts are intended to reduce the total mass loading of contaminants discharged and to contribute, along with other efforts in the area, to water quality improvements in the Chelsea River.